DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 05/21/2008 has been entered.

- **Claims 1-36 are pending.**
- **Claims 1-36 stand rejected.**

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

    1. Determining the scope and contents of the prior art.

2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1, 3, 4, 12, 14, 15, 22 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Parry et al. (Patent No.: US 6,175,552 B1) in view of Gavrilovich (Patent No.: US 7,221,904 B1) and Dunsmore et al. (Patent No.: US 6,856,620 B1), hereafter referred to as Parry, Gavrilovich, and Dunsmore, respectively.

As for Claim 1, Parry shows in lines 29-30, column 3, in the abstract, and in Fig. 2, Sheet 2 of 7, a synchronous ring that incorporates a number of multiplexers (item 21) serving respective ports, and, in column 3, lines 47-54, and in FIG. 2, a dormant master multiplexer (item 21b) is configured as a dormant master multiplexer is coupled to a disaster recovery interface point via a fibre link 26 (FIG. 2) (substantively the same as "a first gateway network element to terminate a synchronous data transmission ring" and "to provide a communication path for signals between a synchronous data transmission ring and network locations external to a synchronous data transmission ring" in the instant invention).

Parry shows in lines 20-21, column 3, and in Fig. 1, Sheet 1 of 7, an arrangement that comprises a number of the same rings, each of which incorporate the multiplexers (see item 21, Fig. 2, Sheet 2 of 7) serving respective ports, and in column 4, lines 19-21, and in FIG. 2, in each synchronous ring, a dormant master multiplexer monitors ring traffic (substantively the same as "a second gateway network element to terminate an additional synchronous data transmission ring" and "to provide a communication path

for signals between an additional synchronous data transmission ring and network locations external to an additional data transmission ring" in the instant invention).

Parry shows in lines 22-23, column 3, and in Fig. 1, Sheet 1 of 7, the number of rings are interconnected via a switch (item 12) (substantively the same as "a central switching core to directly interconnect the first and second gateway network elements" in the instant invention).

Parry shows in lines 38-40, column 3, and in Fig. 2, Sheet 2 of 7, that each ring operates under the control of a master multiplexer (see item 21a) (management element) disposed at the switch. Parry also shows in lines 9-17, 21-23, column 5, and in Fig. 6, Sheet 6 of 7, "the network management system, indicated schematically as 62", which "connects all of the master multiplexers 21 in the system" and instructs the remote switches (see items 12) (gateway network elements) that also control ring configurations to reconfigure appropriately (substantively the same as "a management element (master multiplexer) to interconnect the first and second gateway network elements (remote switches) with a central management system (network management system)" and "a management element (master multiplexer) to ... communicate with the first and second gateway network elements (remote switches) and the central management system (network management system)" and "a central management system (network management system) to provide management signals to ... the synchronous data transmission rings (gateway network elements that control ring configurations)" in the instant invention). Parry fails to teach a network element including a gateway ADM (Add/Drop Multiplexer), to provide a communication path for

signals between a synchronous data transmission ring and network locations external to a synchronous data transmission ring, and to provide a communication path for signals between an additional synchronous data transmission ring and network locations external to an additional synchronous data transmission ring, separate networks operating according to different protocols, and a system that directs traffic flow, and natively communicating with network elements in their respective protocols.

Gavrilovich teaches a network element including a gateway ADM (Add/Drop Multiplexer), to provide a communication path for signals between a synchronous data transmission ring and network locations external to a synchronous data transmission ring, and to provide a communication path for signals between an additional synchronous data transmission ring and network locations external to an additional synchronous data transmission ring, and Dunsmore teaches separate networks operating according to different protocols, and a system that directs traffic flow, and natively communicating with network elements in their respective protocols.

In the same field of endeavor, Gavrilovich teaches in column 6, lines 6-16, and in FIG. 1, fiber optic rings 55, 75 (FIG. 1), are continuous rings with an add/drop multiplexer for each ring in a gateway office, and where the primary function of a gateway office is to provide an interface to a wired telephone network (a network element including a gateway ADM (Add/Drop Multiplexer), to provide a communication path for signals between a synchronous data transmission ring and network locations external to a synchronous data transmission ring, and to provide a communication path for signals between an additional synchronous data transmission ring and network

locations external to an additional synchronous data transmission ring). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the invention of Gavrilovich with the invention of Parry since Gavrilovich provides a system of connecting optical rings to an outside wired telephone network through a gateway office implementing an add/drop multiplexer, and this can provide a dormant master multiplexer in the system of Parry with the ability to connect an SDH ring to a telephone network that is less prone to failures that can completely halt communications, and can also provide the necessary add/drop multiplexer and gateway capabilities for appropriate protocol conversion to maintain communications through a telephone network.

In the same field of endeavor, Dunsmore teaches in column 8, lines 23-41, and in FIG. 1 and FIG. 3, network elements 24a and 24c (FIG. 1 and FIG. 3) in a within a system 10 (FIG. 1) where IP packet may be communicated over local are networks 20 and 28 (FIG. 1 and FIG. 3) and OSI packets may be communicated over optical network 16 (FIG. 1), and network elements 24a and 24c (FIG. 1 and FIG. 3) may receive and convert IP packets into OSI packets, and may also receive and convert OSI packets into IP packets (separate networks operating according to different protocols, and a system that directs traffic flow, and natively communicating with network elements in their respective protocols). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the invention of Dunsmore with the invention of Parry since Dunsmore provides a system where network elements convert packets between IP and OSI protocols and involve connections though optical communication

links comprising optic fiber lines, allowing the system of Parry and its SDH rings with optical fibre to be compatible to both IP and OSI protocols and to provide services to different networks vary between these two protocols though an optical network, expanding the capabilities and services of the system of Parry.

As for Claim 3, Parry in view of Gavrilovich and Dunsmore as applied to Claim 1 teaches all those limitations. Parry further teaches in lines 20-21, column 3, of a SDH network layout comprising a number of rings (substantively the same as “a Synchronous Digital Hierarchy (SDH) ring” in the instant invention).

As for Claim 4, Parry in view of Gavrilovich and Dunsmore as applied to Claim 1 teaches all those limitations. Parry further teaches in lines 20-21, column 3, of a SONET network layout comprising a number of rings (substantively the same as “a Synchronous Optical Network (SONET) ring” in the instant invention).

As for Claim 12, Parry shows in lines 29-30, column 3, in the abstract, and in Fig. 2, Sheet 2 of 7, a synchronous ring that incorporates a number of multiplexers (item 21) serving respective ports, and, in column 3, lines 47-54, and in FIG. 2, a dormant master multiplexer (item 21b) is configured as a dormant master multiplexer is coupled to a disaster recovery interface point via a fibre link 26 (FIG. 2) (substantively the same as “terminating … synchronous data transmission ring on associated gateway network elements” and “providing a communication path for signals between a synchronous data

transmission ring and network locations external to a synchronous data transmission ring" in the instant invention).

Parry shows in lines 22-23, column 3, and in Fig. 1, Sheet 1 of 7, the number of rings are interconnected via a switch (item 12) (substantively the same as "directly interconnecting gateway network elements through a central switching core that connects network elements that terminate synchronous data transmission rings" in the instant invention).

Parry shows in lines 38-40, column 3, and in Fig. 2, Sheet 2 of 7, that each ring operates under the control of a master multiplexer (see item 21a) disposed at the switch. Parry also shows in lines 9-17, 21-23, column 5, and in Fig. 6, Sheet 6 of 7, "the network management system, indicated schematically as 62", which "connects all of the master multiplexers 21 in the system" and instructs the remote switches (see items 12) that also control ring configurations to reconfigure appropriately (substantively the same as "interconnecting the gateway network elements to a central management system with a local management element" in the instant invention). Parry fails to teach associated gateway network elements each include a gateway ADM (Add/Drop Multiplexer) for a switching center that interconnects multiple networks and providing a communication path for signals between data transmission rings and network locations external to data transmission rings, simultaneously supports TDM- (time-division multiplexing) and packet-based traffic, separate networks operating according to different protocols, and a system that directs traffic flow, and communicating with network elements in their respective protocols. Gavrilovich teaches associated gateway

network elements each include a gateway ADM (Add/Drop Multiplexer) for a switching center that interconnects multiple networks and providing a communication path for signals between data transmission rings and network locations external to data transmission rings, simultaneously supports TDM- (time-division multiplexing) and packet-based traffic. Dunsmore teaches separate networks operating according to different protocols, and a system that directs traffic flow, and communicating with network elements in their respective protocols.

In the same field of endeavor, Gavrilovich teaches in column 6, lines 6-16, and in FIG. 1, fiber optic rings 55, 75 (FIG. 1), are continuous rings with an add/drop multiplexer for each ring in a gateway office, and where the primary function of a gateway office is to provide an interface to a wired telephone network (associated gateway network elements each include a gateway ADM (Add/Drop Multiplexer) for a switching center that interconnects multiple networks and providing a communication path for signals between data transmission rings and network locations external to data transmission rings).

Gavrilovich teaches in column 6, lines 58-65, and in FIG. 1, radio interface between moving base stations 30, 40 (FIG. 1) and fixed radio ports 50 (FIG. 1) is time division multi-plexed, direct-sequence, spread-spectrum, code-division-multiple-access interface (TDM/CDMA), where multiple channels between a base station and fixed radio ports are time division multiplexed as time slots in a data stream (simultaneously supports TDM- (time-division multiplexing) and packet-based traffic). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the

invention of Gavrilovich with the invention of Parry since Gavrilovich provides a system of connecting optical rings to an outside wired telephone network through a gateway office implementing an add/drop multiplexer, and this can provide a dormant master multiplexer in the system of Parry with the ability to connect an SDH ring to a telephone network that is less prone to failures that can completely halt communications, and can also provide the necessary add/drop multiplexer and gateway capabilities for appropriate protocol conversion to maintain communications through a telephone network.

In the same field of endeavor, Dunsmore teaches in column 8, lines 23-41, and in FIG. 1 and FIG. 3, network elements 24a and 24c (FIG. 1 and FIG. 3) in a within a system 10 (FIG. 1) where IP packet may be communicated over local are networks 20 and 28 (FIG. 1 and FIG. 3) and OSI packets may be communicated over optical network 16 (FIG. 1), and network elements 24a and 24c (FIG. 1 and FIG. 3) may receive and convert IP packets into OSI packets, and may also receive and convert OSI packets into IP packets (separate networks operating according to different protocols, and a system that directs traffic flow, and communicating with network elements in their respective protocols). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the invention of Dunsmore with the invention of Parry since Dunsmore provides a system where network elements convert packets between IP and OSI protocols and involve connections though optical communication links comprising optic fiber lines, allowing the system of Parry and its SDH rings with optical fibre to be compatible to both IP and OSI protocols and to provide services to different networks

vary between these two protocols though an optical network, expanding the capabilities and services of the system of Parry.

As for Claim 14, Parry shows in lines 29-30, column 3, in the abstract, and in Fig. 2, Sheet 2 of 7, a synchronous ring that incorporates a number of multiplexers (item 21) serving respective ports (substantively the same as "terminating the synchronous data transmission rings" in the instant invention). As discussed above with respect to Claim 3, Parry further teaches in lines 20-21, column 3, of a SDH network layout comprising a number of rings (substantively the same as "a Synchronous Digital Hierarchy (SDH) ring" in the instant invention).

As for Claim 15, Parry as applied to Claim 14 teaches the limitation "terminating the synchronous data transmission rings". As discussed above with respect to Claim 4, Parry further teaches in lines 20-21, column 3, of a SONET network layout comprising a number of rings (substantively the same as "a Synchronous Optical Network (SONET) ring" in the instant invention).

As for Claim 22, Parry shows in lines 22-23, column 3, and in Fig. 1, Sheet 1 of 7, the number of rings are interconnected via a switch (item 12) (substantively the same as "a central switching core to directly interconnect" in the instant invention).

Parry shows in lines 29-30, column 3, in the abstract, and in Fig. 2, Sheet 2 of 7, a synchronous ring that incorporates a number of multiplexers (item 21) serving

respective ports, and, in lines 20-21, column 3, and in Fig. 1, Sheet 1 of 7, an arrangement that comprises a number of the same rings, each of which incorporate the multiplexers (see item 21, Fig. 2, Sheet 2 of 7) serving respective ports (substantively the same as “a synchronous data transmission ring terminated on a first gateway network element with an additional synchronous data transmission ring terminated on a second gateway network element” in the instant invention).

Parry shows in lines 38-40, column 3, and in Fig. 2, Sheet 2 of 7, that each ring operates under the control of a master multiplexer (see item 21a) disposed at the switch. Parry also shows in lines 9-10, 21-23, column 5, and in Fig. 6, Sheet 6 of 7, “the network management system, indicated schematically as 62”, which “connects all of the master multiplexers 21 in the system” and “instructs the remote switches 12 to reconfigure appropriately” (substantively the same as “a local management element to interconnect the integrated switch with a central management system” in the instant invention). Parry fails to teach network element includes a gateway ADM (Add/Drop Multiplexer) to provide a communication path for signals between data transmission rings and network locations external to data transmission rings, separate networks operating according to different protocols, and a system that directs traffic flow, and communicating with network elements in their respective protocols. Gavrilovich teaches network element includes a gateway ADM (Add/Drop Multiplexer) to provide a communication path for signals between data transmission rings and network locations external to data transmission rings, and Dunsmore teaches separate networks

operating according to different protocols, and a system that directs traffic flow, and communicating with network elements in their respective protocols.

In the same field of endeavor, Gavrilovich teaches in column 6, lines 6-16, and in FIG. 1, fiber optic rings 55, 75 (FIG. 1), are continuous rings with an add/drop multiplexer for each ring in a gateway office, and where the primary function of a gateway office is to provide an interface to a wired telephone network (network element includes a gateway ADM (Add/Drop Multiplexer) to provide a communication path for signals between data transmission rings and network locations external to data transmission rings). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the invention of Gavrilovich with the invention of Parry since Gavrilovich provides a system of connecting optical rings to an outside wired telephone network through a gateway office implementing an add/drop multiplexer, and this can provide a dormant master multiplexer in the system of Parry with the ability to connect an SDH ring to a telephone network that is less prone to failures that can completely halt communications, and can also provide the necessary add/drop multiplexer and gateway capabilities for appropriate protocol conversion to maintain communications through a telephone network.

In the same field of endeavor, Dunsmore teaches in column 8, lines 23-41, and in FIG. 1 and FIG. 3, network elements 24a and 24c (FIG. 1 and FIG. 3) in a within a system 10 (FIG. 1) where IP packet may be communicated over local are networks 20 and 28 (FIG. 1 and FIG. 3) and OSI packets may be communicated over optical network 16 (FIG. 1), and network elements 24a and 24c (FIG. 1 and FIG. 3) may receive and

convert IP packets into OSI packets, and may also receive and convert OSI packets into IP packets (separate networks operating according to different protocols, and a system that directs traffic flow, and communicating with network elements in their respective protocols). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the invention of Dunsmore with the invention of Parry since Dunsmore provides a system where network elements convert packets between IP and OSI protocols and involve connections though optical communication links comprising optic fiber lines, allowing the system of Parry and its SDH rings with optical fibre to be compatible to both IP and OSI protocols and to provide services to different networks vary between these two protocols though an optical network, expanding the capabilities and services of the system of Parry.

As for Claim 30, Parry shows in lines 22-23, column 3, and in Fig. 1, Sheet 1 of 7, the number of rings are interconnected via a switch (item 12) (substantively the same as “directly interconnecting” in the instant invention).

Parry shows in lines 29-30, column 3, in the abstract, and in Fig. 2, Sheet 2 of 7, a synchronous ring that incorporates a number of multiplexers (item 21) serving respective ports, and, in lines 20-21, column 3, and in Fig. 1, Sheet 1 of 7, an arrangement that comprises a number of the same rings, each of which incorporate the multiplexers (see item 21, Fig. 2, Sheet 2 of 7) serving respective ports (substantively the same as “a synchronous data transmission ring terminated on a first gateway

network element" and "an additional synchronous data transmission ring terminated on a second gateway network element" in the instant invention).

Parry shows in lines 38-40, column 3, and in Fig. 2, Sheet 2 of 7, that each ring operates under the control of a master multiplexer (see item 21a) disposed at the switch. Parry also shows in lines 9-10, 21-23, column 5, and in Fig. 6, Sheet 6 of 7, "the network management system, indicated schematically as 62", which "connects all of the master multiplexers 21 in the system" and "instructs the remote switches 12 to reconfigure appropriately" (substantively the same as "maintaining a gateway management communication channel between a central management system and the first and second gateway network elements" in the instant invention). Parry fails to teach network element includes a gateway ADM (Add/Drop Multiplexer) to provide a communication path for signals between data transmission rings and network locations external to data transmission rings, separate networks operating according to different protocols, and a system that directs traffic flow, and communicating with network elements in their respective protocols. Gavrilovich teaches network element includes a gateway ADM (Add/Drop Multiplexer) to provide a communication path for signals between data transmission rings and network locations external to data transmission rings, and Dunsmore teaches separate networks operating according to different protocols, and a system that directs traffic flow, and communicating with network elements in their respective protocols.

In the same field of endeavor, Gavrilovich teaches in column 6, lines 6-16, and in FIG. 1, fiber optic rings 55, 75 (FIG. 1), are continuous rings with an add/drop

multiplexer for each ring in a gateway office, and where the primary function of a gateway office is to provide an interface to a wired telephone network (network element includes a gateway ADM (Add/Drop Multiplexer) to provide a communication path for signals between data transmission rings and network locations external to data transmission rings). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the invention of Gavrilovich with the invention of Parry since Gavrilovich provides a system of connecting optical rings to an outside wired telephone network through a gateway office implementing an add/drop multiplexer, and this can provide a dormant master multiplexer in the system of Parry with the ability to connect an SDH ring to a telephone network that is less prone to failures that can completely halt communications, and can also provide the necessary add/drop multiplexer and gateway capabilities for appropriate protocol conversion to maintain communications through a telephone network.

In the same field of endeavor, Dunsmore teaches in column 8, lines 23-41, and in FIG. 1 and FIG. 3, network elements 24a and 24c (FIG. 1 and FIG. 3) in a within a system 10 (FIG. 1) where IP packet may be communicated over local are networks 20 and 28 (FIG. 1 and FIG. 3) and OSI packets may be communicated over optical network 16 (FIG. 1), and network elements 24a and 24c (FIG. 1 and FIG. 3) may receive and convert IP packets into OSI packets, and may also receive and convert OSI packets into IP packets (separate networks operating according to different protocols, and a system that directs traffic flow, and communicating with network elements in their respective protocols). It would have been obvious to one of ordinary skill in the art at the time of

the invention to combine the invention of Dunsmore with the invention of Parry since Dunsmore provides a system where network elements convert packets between IP and OSI protocols and involve connections though optical communication links comprising optic fiber lines, allowing the system of Parry and its SDH rings with optical fibre to be compatible to both IP and OSI protocols and to provide services to different networks vary between these two protocols though an optical network, expanding the capabilities and services of the system of Parry.

Claims 2, 13, 23 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Parry in view of Gavrilovich, Dunsmore, and further in view of Douglas (Patent Number: 5,097,469), hereafter referred to as Douglas.

As for Claims 2, 23 and 31, Parry in view of Gavrilovich and Dunsmore as applied to Claims 1, 22 and 30 teaches all those limitations. Parry fails to teach network elements manufactured by different vendors. However, in the same field of endeavor, Douglas teaches in lines 50-51, column 2, that a data communications network may have equipment manufactured by different suppliers (substantively the same as "network elements manufactured by different vendors" in the instant invention). It would have been obvious to one skilled in the art at the time of the invention to adopt the passive monitor of Douglas into the disaster recovery system of Parry since passive monitoring of traffic can provide information to aid in rerouting data traffic efficiently in the event of a switch failure and to monitor the health of the network after such a failure without introducing probe packets or similar traffic into the network.

As for Claim 13, as discussed above with respect to Claim 1, Parry shows in lines 29-30, column 3, in the abstract, and in Fig. 2, Sheet 2 of 7, a synchronous ring that incorporates a number of multiplexers (item 21) serving respective ports (substantively the same as "terminating the synchronous data transmission rings comprises terminating the synchronous transmission rings with network elements" in the instant invention).

Parry does not teach network elements manufactured by different vendors. However, as discussed above with respect to Claim 2, Douglas teaches in lines 50-51 that a data communications network may have equipment manufactured by different suppliers (substantively the same as "network elements manufactured by different vendors " in the instant invention). It would have been obvious to one skilled in the art at the time of the invention to adopt the passive monitor of Douglas into the disaster recovery system of Parry since passive monitoring of traffic can provide information to aid in rerouting data traffic efficiently in the event of a switch failure and to monitor the health of the network after such a failure without introducing probe packets or similar traffic into the network.

Claims 5, 6, 16, 17, 24 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Parry in view of Gavrilovich, Dunsmore, and further in view of Chen et al. (Patent No.: US 7,130,276 B2), hereafter referred to as Chen.

As for Claim 5, Parry as applied to Claim 1 teaches all those limitations. Parry fails to teach a packet-based switching fabric overlaid with a synchronous frame structure. However, in the same field of endeavor, Chen teaches in lines 39-40, column 2, of a "switching fabric of a network switch", and, in lines 40-43, column 3, and in FIG. 1, Sheet 1 of 11, Chen shows a cell/packet switching engine (see item 140) providing switching at the cell/packet level, and its resulting data is sent to the ATM/POS framer (see item 150) for framing in the appropriate format (substantively the same as "the central switching core includes a packet-based switching fabric overlaid with a synchronous frame structure" in the instant invention).

It would have been obvious to one skilled in the art at the time of the invention to adopt the network switch of Chen into the telecommunications network of Parry since the network switch works with synchronous technology and allows switching of not only SONET and TDM data, but also ATM and IP data, increasing the flexibility and capabilities of the telecommunications network.

As for Claims 6, 24 and 32, Parry shows in lines 19-26, column 3, and FIG. 1, Sheet 1 of 7, that the rings of the arrangement are interconnected via the switch (item 12), and the switch forms network node which is coupled to further network switches to transport traffic between nodes, where this will cause traffic from individual rings to be funneled to other rings and nodes, causing traffic from each individual ring to be a tributary when combined with traffic from other individual rings (substantively the same as "the central switching core comprises a switching platform to switch a traffic stream

tributary across the one and the additional synchronous data transmission rings" in the instant invention).

As for Claims 16 and 17, Parry as applied to Claim 12 teaches those limitations. Parry fails to teach a packet-based switching fabric overlaid with a synchronous frame structure. However, in the same field of endeavor, Chen teaches in lines 39-40, column 2, of a "switching fabric of a network switch", and, in lines 40-43, column 3, and in FIG. 1, Sheet 1 of 11, Chen shows a cell/packet switching engine (see item 140) providing switching at the cell/packet level, and its resulting data is sent to the ATM/POS framer (see item 150) for framing in the appropriate format (substantively the same as "the central switching core includes a packet-based switching fabric overlaid with a synchronous frame structure" in the instant invention).

It would have been obvious to one skilled in the art at the time of the invention to adopt the network switch of Chen into the telecommunications network of Parry since the network switch works with synchronous technology and allows switching of not only SONET and TDM data, but also ATM and IP data, increasing the flexibility and capabilities of the telecommunications network.

Claims 7 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Parry in view of Gavrilovich, Dunsmore, Chen, and further in view of Roy et al. (Patent No.: US 6,631,130 B1), hereafter referred to as Roy.

As for Claims 7 and 25, Parry in view of Gavrilovich, Dunsmore, Chen as applied to Claims 1 and 5 teach all those limitations. Parry fails to teach a PDU traffic stream termination card comprising a gateway element, a TDM termination card comprising the other gateway element, or a switch that switches both stream types. However, in the same field of endeavor, Roy teaches in lines 65-67, column 2, and lines 1-3, column 3, a network switch that has at least one interface for TDM traffic and at least one interface for ATM and packet traffic, implicitly teaching that the network switch can be connected to a TDM network device and an IP network device (where the PDUs of IP are packets), and the network switch can switch both types of traffic (substantively the same as "the first gateway network element comprises a Protocol Data Unit (PDU) traffic stream termination card and the second gateway network element comprises a Time-Division Multiplex (TDM) traffic stream termination card, and the central switching core switches both streams" in the instant invention).

It would have been obvious to one skilled in the art at the time of the invention to adopt the switch of Roy into the network of Parry and Chen since the switch has interfaces for both SONET and ATM/packet traffic, and such capabilities will allow the switch to connect to ATM, packet, and TDM devices and networks, allowing the network to be scalable with these other technologies and accept these traffic types.

Claims 8, 18, 26, and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Parry in view of Gavrilovich, Dunsmore, and further in view of Heuer et al. (Patent No.: US 6,717,953 B1), hereafter referred to as Heuer.

As for Claims 8, 18 and 26, Parry in view of Gavrilovich and Dunsmore as applied to Claims 1, 12 and 22 teach all those limitations. Parry fails to teach a network element that employs a management communication channel that is incompatible with the central management system. However, in the same field of endeavor, Heuer shows in FIG. 1, Sheet 1 of 3, an SDH system (item 11) connected with a SONET system (item 13). Lines 19-24, 49, 65-67, column 4, of Heuer teach that the SDH management system (see item 28, FIG. 1, Sheet 1 of 3) can manage both the SDH and SONET rings concurrently, but that the SONET signals of the SONET ring must be converted since SONET signals are not usable by the SDH management system (substantively the same as "least one of the first and the second gateway network elements employing a management communication channel that is incompatible with the central management system" in the instant invention).

Heuer teaches in lines 45-47, column 4, and in FIG. 2, Sheet 1 of 3, the conversion must be performed in either multiplexer (see items 28 and 29) (substantively the same as "the management element interconnects the first and the second gateway network elements to the central management system " in the instant invention).

It would have been obvious to one skilled in the art at the time of the invention to adopt the facility of Heuer into the network of Parry since the conversion of SONET signals into an SDH signals will allow SONET networks to be connected to a SDH network of Parry and be managed by the SDH network management system and participate in the disaster recovery.

As for Claim 33, Parry in view of Gavrilovich and Dunsmore as applied to Claims 8 and 12 teach all those limitations. Parry fails to teach natively supporting of the incompatible management channels. Heuer further teaches in lines 56-61, column 3, and FIG. 1, Sheet 1 of 3, that SDH and SONET systems can be connected by a STM-1 link, and, despite differences that make them incompatible and require conversion for management purposes (see Heuer, lines 19-24, column 4), the frame formats of the two systems are identical and both can operate on the STM-1 link (substantively the same as "natively supporting multiple incompatible management communication channels" in the instant invention). It would have been obvious to one skilled in the art at the time of the invention to adopt the facility of Heuer into the network of Parry since the conversion of SONET signals into an SDH signals will allow SONET networks to be connected to a SDH network of Parry and be managed by the SDH network management system and participate in the disaster recovery.

Claims 9 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Parry in view of Gavrilovich, Dunsmore, Heuer, and further in view of Houston et al. (Patent No.: US 6,778,541 B2), hereafter referred to as Houston.

As for Claim 9, Parry in view of Gavrilovich, Dunsmore, and Heuer as applied to Claim 8 teach all those limitations. Parry fails to teach where one network element employs an IP stack and a second network element employs an OSI stack. However, in the same field of endeavor, Houston shows in Fig. 1, Sheet 1 of 9, an IP router (see item 24) which employs an IP stack like that shown as item IP STACK 34, Fig. 3, Sheet

3 of 9 (substantively the same as “the first gateway network element employs an Internet Protocol (IP) stack” in the instant invention).

Houston also shows in Fig. 1, Sheet 1 of 9, an network element item 12, that employs an OSI stack like that shown as item OSI STACK 32, Fig. 3, Sheet 3 of 9 (substantively the same as “the second gateway network element employs an an Open System Interconnection (OSI) stack in the instant invention).

It would have been obvious to one skilled in the art at the time of the invention to adopt the network element of Houston into the network of Parry and Heuer since Houston provides tunneling between SDH and IP networks, allowing the network of Parry to accept data from outside IP networks.

As for Claim 19, Parry in view of Gavrilovich, Dunsmore, and Heuer as applied to Claims 8 and 12 teach all those limitations. Parry fails to teach an IP network element and an OSI management system. However, in the same field of endeavor, Houston shows in Fig. 1, Sheet 1 of 9, an IP router (see item 24) which employs an IP stack like that shown as item IP STACK 34, Fig. 3, Sheet 3 of 9 (substantively the same as “a network element that employs an Internet Protocol (IP) stack” in the instant invention).

Houston also shows in Fig. 1, Sheet 1 of 9, a SDH/SONET network item 20 that employs OSI connections and employs an OSI stack like that shown as item OSI STACK 32, Fig. 3, Sheet 3 of 9 (substantively the same as “supports an Open System Interconnection (OSI) stack and not the IP stack” in the instant invention). It would have

been obvious to one skilled in the art at the time of the invention to adopt the network element of Houston into the network of Parry and Heuer since Houston provides tunneling between SDH and IP networks, allowing the network of Parry to accept data from outside IP networks.

Claims 10 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Parry in view of Gavrilovich, Dunsmore, Heuer, and further in view of Doidge et al. (Patent Number: 6,064,674), hereafter referred to as Doidge.

As for Claim 10, Parry in view of Gavrilovich, Dunsmore, and Heuer as applied to Claim 8 teach all those limitations. Parry fails to teach incompatible applications of OSI stacks. However, in the same field of endeavor, Doidge shows in FIG. 2, Sheet 2 of 12, a LAN switch (item 20) connected to a network of ATM devices, where, in lines 65-67, column 7, "incompatible OSI layers 2 and 3 protocols of the LAN frames and the ATM network" (substantively the same as "the applications of the OSI stacks between the first and second gateway network elements are incompatible" in the instant invention).

It would have been obvious to one skilled in the art at the time of the invention to adopt the apparatus of Doidge into the network of Parry and Heuer since the apparatus allows the converting of different protocols efficiently through hardware and without requiring intervention by a microprocessor, allowing the network to efficiently accept data from protocols other than its own.

As for Claim 20, Parry in view of Gavrilovich, Dunsmore, and Heuer as applied to Claims 8 and 12 teach all those limitations. Parry fails to teach incompatible applications of the OSI stack. However, in the same field of endeavor, Doidge shows in FIG. 2, Sheet 2 of 12, a LAN switch (item 20) connected to a network of ATM devices, where, in lines 65-67, column 7, "incompatible OSI layers 2 and 3 protocols of the LAN frames and the ATM network" (substantively the same as "... employs a different, incompatible application of the OSI stack than an application of the OSI stack supported by the ..." in the instant invention). It would have been obvious to one skilled in the art at the time of the invention to adopt the apparatus of Doidge into the network of Parry and Heuer since the apparatus allows the converting of different protocols efficiently through hardware and without requiring intervention by a microprocessor, allowing the network to efficiently accept data from protocols other than its own.

Claims 11, 21, 29 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Parry in view of Gavrilovich, Dunsmore, and further in view of Nakatsugawa (Patent No.: US 6,747,982 B2), hereafter referred to as Nakatsugawa.

As for Claims 11, 21, 29 and 36, Parry as applied to Claims 1, 12, 22 and 30 teaches all those limitations. Parry fails to teach an interface to the central switching to locally drop traffic from a tributary on a synchronous data transmission ring terminated on a first gateway network element. However, in the same field of endeavor, Nakatsugawa shows in lines 2-9, FIG. 4, Sheet 4 of 6, that a single gateway (see item 11, FIG. 1, Sheet 1 of 6) can have two separate function blocks (see items 63 and 65,

FIG. 4, Sheet 4 of 6), and when function block item 63 receives data from its respective LAN (see item 3, FIG. 4) that does not have a destination on its respective LAN, it sends the data through route 23 within the gateway to function block item 64 for processing (substantively the same as "an interface to interconnect with the central switching core to locally drop traffic from a tributary on a synchronous data transmission ring terminated on the first gateway network element" in the instant invention).

It would have been obvious to one skilled in the art at the time of the invention to adopt the method of Nakatsugawa into the network of Parry since Nakatsugawa provides an efficient routing method and gateway for a loop network.

Claims 27, 28, 34 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Parry in view of Gavrilovich, Dunsmore, Heuer, and further in view of Hunneyball (Pub. No.: US 2004/0136389 A1), hereafter referred to as Hunneyball.

As for Claims 27 and 34, Parry in view of Gavrilovich, Dunsmore, and Heuer as applied to Claims 8 and 33 teach all those limitations. Parry fails to teach mutually incompatible IP and OSI management channels running over DCC. However, in the same field of endeavor, Hunneyball teaches in the abstract of OSI protocols running over a network of embedded Data Communications Channels and of MPLS/IP protocols running over a network of embedded Data Communication Channels (substantively the same as "management channels include Internet Protocol (IP) over Data Communication Channel (DCC) and Open System Interconnection (OSI) over DCC" in the instant invention).

It would have been obvious to one skilled in the art at the time of the invention to combine aspects of the network of Hunneyball into the network of Parry and Heuer since Hunneyball provides a management system that allows MPLS enabled network devices to be managed on SDH ring networks.

As for Claims 28 and 35, Parry in view of Gavrilovich, Dunsmore, and Heuer as applied to Claims 26 and 33 teach all those limitations. Parry fails to teach mutually incompatible IP and OSI management channels running over DCC. However, in the same field of endeavor, Hunneyball teaches in the abstract of OSI protocols running over a network of embedded Data Communications Channels and of MPLS/IP protocols running over a network of embedded Data Communication Channels (substantively the same as “management channels include Internet Protocol (IP) over Data Communication Channel (DCC) and Open System Interconnection (OSI) over DCC” in the instant invention).

It would have been obvious to one skilled in the art at the time of the invention to combine aspects of the network of Hunneyball into the network of Parry and Heuer since Hunneyball provides a management system that allows MPLS enabled network devices to be managed on SDH ring networks.

Response to Arguments

I. Arguments for rejections made under 35 USC § 103.

Applicant's arguments with respect to claims 1-36 have been considered but are moot in view of the new ground(s) of rejection. With respect to Independent Claims 1, 12, 22, and 30, newly found prior art references Gavrilovich (Patent No.: US 7,221,904 B1) and Dunsmore et al. (Patent No.: US 6,856,620 B1) teach the amendment limitations not taught by Parry.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. **Bousis (Pub. No.: US 2006/0133413 A1)** teaches in paragraphs [0020] and [0025], an external network connected to an internal network via a gateway, and where a first part of an internal network uses IPv4 addressing, while a second part uses IPv6 addressing (separate networks operating according to different protocols, and a system that directs traffic flow, and natively communicating with network elements in their respective protocols).

Linden (Pub. No.: US 2003/0174713 A1) teaches in paragraph [0042], and in FIG. 4 and FIG. 5, Optical Add Drop Multiplexers (OADM) of gateway arrangements for interconnecting networks (a network element including a gateway ADM (Add/Drop Multiplexer)).

Sitbon et al. (Patent Number: 5,568,487) teaches in column 1, line 53 to column 2, line 18, conversion between TCP/IP and OSI/CO (separate networks operating according to different protocols, and a system that directs traffic flow, and natively communicating with network elements in their respective protocols).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JOSHUA SMITH whose telephone number is (571)270-1826. The examiner can normally be reached on Monday-Thursday 9:30am-7pm, Alternating Fridays 9:30am-6pm, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on 571-272-3088. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Joshua Smith
Patent Examiner
12 June 2008

/Hassan Kizou/
Supervisory Patent Examiner, Art Unit 2619